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(71) Applicant: **SONY CORP**

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(54) **SEMICONDUCTOR DEVICE AND ITS  
FABRICATION**

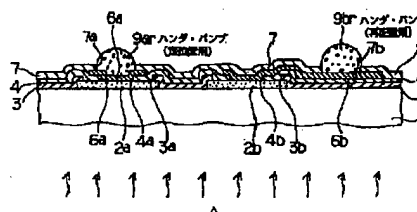
shielding effect can be attained.

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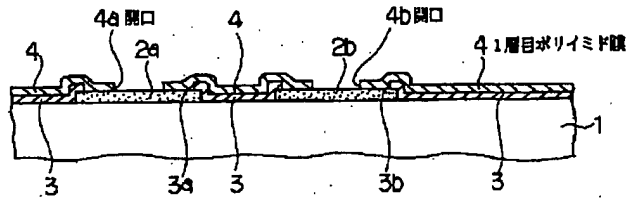
(57) Abstract:

PROBLEM TO BE SOLVED: To attain an excellent  $\alpha$ -ray preventive effect with a film thickness significantly thinner than a thick film coating resin by covering an active region at least partially with an  $\alpha$ -ray shielding metal on the surface of a semiconductor chip for forming an electrode.

SOLUTION: Al electrode pads 2a, 2b formed on a substrate 1 are exposed sequentially in the openings 3a, 3b of SiN passivation films 3, 4 and the openings 4a, 4b of a first layer polyimide film 4. Surface part of the Al electrode pad 2a is then coated with a BLM film 6a and connected with a solder bump 9ar (for fixed position). On the other hand, surface part of the Al electrode pad 2b is provided with a BLM film 6b extending to the outside of the immediately above region and connected, at the forward end thereof, with a solder bump 9br (for arrangement). Active region of the solder bump 9br is susceptible to by  $\alpha$ -ray, but since it is covered with the BLM film 6b (three layer structure of a intermediate layer of Cu of about 5  $\mu$ m thick and Cr film, the BLM film 6a has similar structure), excellent  $\alpha$ -ray

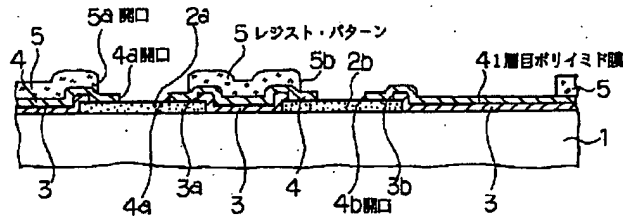


【図5】



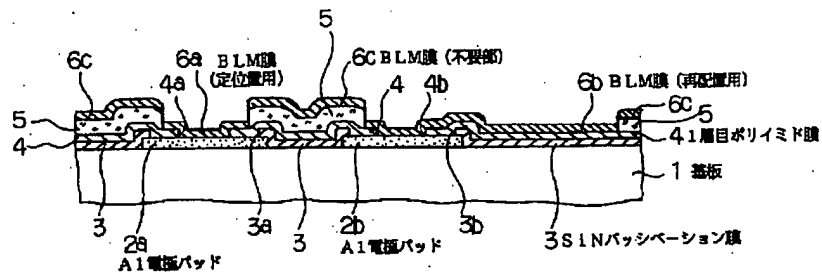
1層ポリイミド膜のパターニング工程

【図6】



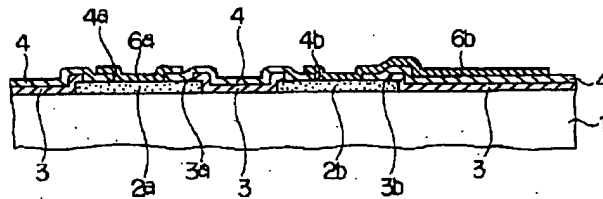
レジスト・パターニング工程

【図7】



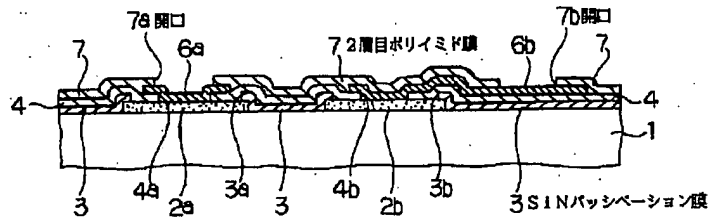
スパッタリングによるBLM膜の成膜工程

【図8】



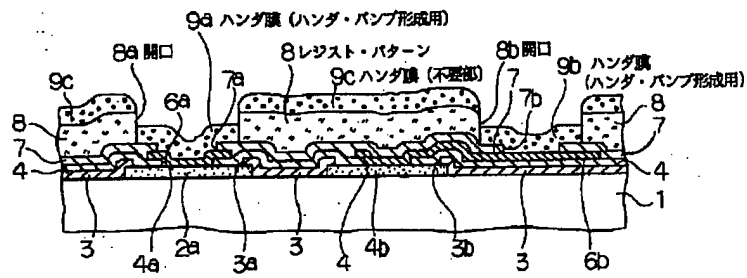
リフトオフによるBLM膜不要部の除去工程

【図9】



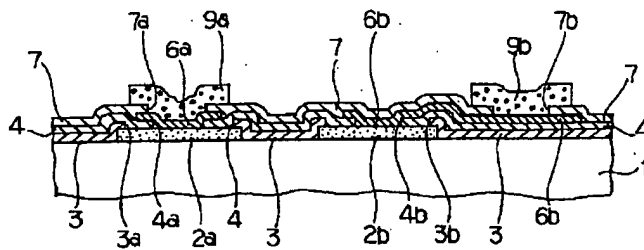
ハンダ・パンプの形成部位を規定するための  
2層ポリイミド膜のパターニング工程

【図10】



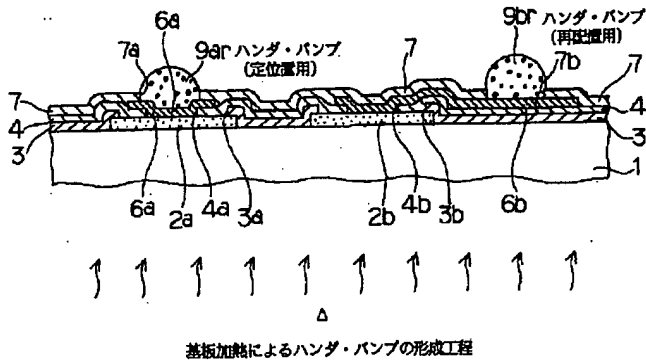
ハンダ膜の接着部位を規定するためのレジスト・パターニング、  
およびハンダ膜の蒸着工程

【図11】

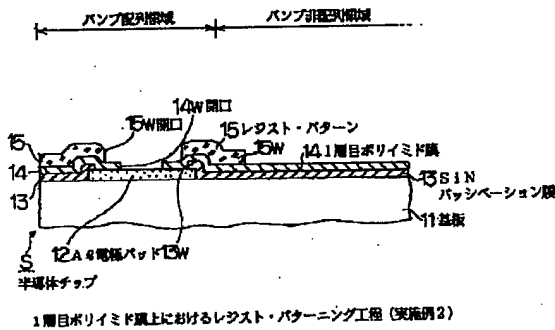


リフトオフによるハンダ膜不要部の除去工程

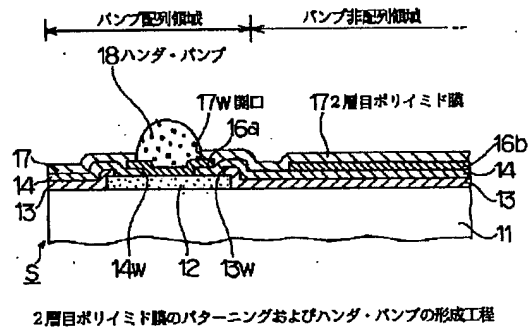
【図12】



【図13】



【図15】



【図16】

